

Lake Tahoe Action on Plastic-Shedding “Monopine” Wireless Towers — Background

August 29, 2026

THE ISSUE IN BRIEF

The Tahoe Regional Planning Agency (TRPA) has amended Chapter 36 of its Code of Ordinances to address an environmental problem that until recently received little regulatory attention: the deterioration and shedding of plastic camouflage materials from wireless telecommunications towers designed to resemble pine trees.

These so-called “monopines” are intended to reduce the visual impact of telecommunications infrastructure, particularly in scenic and environmentally sensitive locations. But the camouflage itself can create a different environmental problem.

The artificial pine needles used on many monopines are made from plastic materials such as PVC, while artificial branches may contain fiberglass-reinforced plastic. Over years of exposure to ultraviolet radiation, wind, snow, ice and large temperature variations, these materials can become brittle, deteriorate and detach.

Lake Tahoe residents and environmental advocates documented substantial accumulations of broken artificial needles and branch material beneath multiple monopine installations in the Tahoe Basin.

TRPA’s new rules respond to this problem by discouraging reliance on plastic screening materials where practicable and requiring greater documentation, monitoring, maintenance and corrective action when those materials are used.

The amendments took effect August 24, 2026.

WHAT TRPA DID

TRPA’s action does **not** categorically prohibit monopines or all plastic screening materials.

Instead, the amendments establish a regulatory approach based on avoidance where practicable and increased accountability where plastic camouflage continues to be used.

As summarized by TRPA staff, the amendments:

- express a policy preference against reliance on plastic screening material where practicable;
- encourage applicants to consider alternative designs;
- require additional information concerning proposed screening materials;
- strengthen monitoring and maintenance requirements; and

- provide for corrective action when deterioration or debris occurs.

TRPA staff specifically identified concerns about the long-term durability of plastic screening materials, their deterioration under Lake Tahoe Basin climatic conditions, and their potential to create material debris over time.

This approach is significant because it treats the **life cycle of camouflage materials**—not merely their appearance when first installed—as a legitimate consideration in telecommunications facility design and regulation.

HOW THE ISSUE WAS DISCOVERED

The regulatory change followed years of citizen investigation, advocacy and litigation.

Lake Tahoe residents and environmental advocates examined multiple monopine sites around the Basin and observed accumulations of fallen artificial pine needles and broken branch material beneath the towers. Video and photographic documentation was assembled beginning several years ago.

Attorneys Robert J. Berg and Julian Gresser, working pro bono with residents, environmental advocates and legal volunteers, subsequently raised the issue with TRPA in connection with federal litigation involving approval of a proposed monopine near Heavenly Valley.

The litigation and accompanying discussions eventually helped focus attention on a larger policy question:

Should a material required or permitted in order to protect scenic resources be allowed to deteriorate over time in a manner that may itself adversely affect the surrounding environment?

Constructive discussions between TRPA and the plaintiffs contributed to development of the new regulatory protections. After TRPA moved forward with the amendments, the remaining federal litigation was resolved.

WHY LAKE TAHOE IS PARTICULARLY IMPORTANT

Lake Tahoe is internationally known for its [water clarity](#) and environmental value. It is also a location where plastic pollution has become a significant scientific concern.

A [major peer-reviewed international study published in *Nature*](#) examined plastic particles larger than 250 micrometers in the surface waters of 38 lakes and reservoirs in 23 countries. Lake Tahoe had the **third-highest concentration among the 38 water bodies sampled**, behind Lake Lugano and Lake Maggiore.

The study found plastic debris in every lake and reservoir sampled and reported that concentrations in some freshwater systems reached or exceeded concentrations previously reported in subtropical oceanic gyres.

The study did **not** determine that monopines were responsible for Lake Tahoe's measured microplastic concentrations. The relevance of monopines is more specific: deteriorating plastic materials represent a potentially avoidable, land-based source of plastic debris in an ecosystem already known to have a significant plastic-pollution burden.

Researchers associated with Columbia University's Lamont-Doherty Earth Observatory have separately been involved in examining microplastic pollution and the environmental pathways by which larger plastic materials fragment into progressively smaller particles.

FROM MACROPLASTIC DEBRIS TO MICROPLASTICS

The materials visible beneath deteriorating monopines is not considered "microplastics" when they first fall from a tower.

That distinction is important scientifically.

Microplastics are generally defined as plastic particles smaller than five millimeters. Larger plastic fragments exposed to sunlight, abrasion, temperature changes and weathering can progressively break down into smaller particles.

Thus, the immediate regulatory issue is the release of **plastic debris** into the environment and the possibility that such debris can subsequently fragment and migrate through soil, stormwater systems and waterways.

TRPA's approach is essentially preventive: reduce avoidable plastic shedding at its source, rather than waiting to determine where every fragment ultimately travels.

WHY MONOPINES ARE USED

Wireless cell towers can create significant visual impacts, particularly in scenic areas. Communities, therefore, frequently require telecommunications companies to disguise towers as trees or incorporate other forms of "stealth" screening.

Artificial-tree towers have consequently been installed throughout the United States. Estimates number in the tens of thousands nationwide.

The original environmental rationale is understandable: reduce visual intrusion.

The Lake Tahoe experience, however, illustrates a previously underappreciated tradeoff. A design intended to mitigate one environmental impact can create another if its camouflage materials deteriorate and disperse.

The policy question therefore is not simply:

“Should a cell tower look like a tree?”

It is:

“What design best protects scenic quality over the full operating life of the facility without creating unnecessary environmental pollution?”

WHY TRPA’S ACTION MAY MATTER NATIONALLY

The underlying problem is not unique to Lake Tahoe.

Artificial-tree wireless cell towers are used in communities throughout the United States, particularly where scenic, historic or environmental considerations make conventional tower designs controversial.

TRPA’s response offers municipalities and other permitting authorities a practical model that does not insist upon an outright prohibition.

Communities considering new faux-tree facilities—or reviewing existing ones—can ask:

1. What plastic materials are being proposed?
2. What is their expected service life?
3. How do they perform after years of UV exposure, wind, rain, snow, ice and temperature variation?
4. Who is responsible for inspecting the materials?
5. How frequently must inspections occur?
6. What constitutes unacceptable deterioration?
7. Who is responsible for removing fallen debris?
8. How often will fallen camouflage be repaired or replaced?
9. Are less polluting alternative designs available?
10. What happens to the materials at the end of the facility’s useful life?

These are conventional life-cycle and maintenance questions. TRPA’s action demonstrates that they can also be applied to the camouflage materials used on telecommunications infrastructure.

A SECOND LESSON: ENVIRONMENTAL PROBLEM-SOLVING

There is also a broader institutional story.

The Tahoe matter began in disagreement and litigation. Yet the eventual outcome was not simply a court victory by one side over another.

Citizens documented an environmental problem. Lawyers pressed the issue. TRPA staff evaluated the concerns. The parties engaged in discussions. The agency ultimately adopted a regulatory response, and the remaining litigation was resolved.

At a time when environmental and infrastructure disputes can become highly polarized, the process offers an example of adversaries finding a practical area of common ground while preserving essential telecommunications services and environmental protection.

KEY CHRONOLOGY

2021 and afterward: Lake Tahoe residents and advocates document deteriorated plastic needles and branch materials around multiple monopine installations in the Basin.

Following years: Advocates investigate the environmental implications and raise the issue with public agencies and researchers.

Federal litigation: Plaintiffs challenge TRPA's approval of a proposed monopine near Heavenly Valley and raise concerns about plastic camouflage materials and their environmental effects.

2026: Discussions between TRPA and the plaintiffs contribute to consideration of amendments addressing plastic screening materials used on wireless facilities.

June 2026: TRPA's Governing Board adopts amendments to Chapter 36 of the Code of Ordinances.

August 24, 2026: The amendments become effective.

Following adoption: The remaining federal litigation is resolved.

DOCUMENTS AND MATERIALS AVAILABLE TO JOURNALISTS

Upon request, the advocates can provide:

- TRPA staff materials concerning the Chapter 36 amendments;
- the adopted ordinance language;
- pleadings and relevant documents from the federal litigation;
- photographs and video of plastic debris observed at monopine sites;
- background information concerning the citizen investigation;
- information concerning the scientific investigation of microplastics;
- interviews with attorneys and participating advocates; and
- information for journalists interested in examining monopine regulation in other jurisdictions.

SCIENTIFIC CONTEXT

For independent scientific background, reporters may wish to consult the [2023 *Nature* study, “Plastic debris in lakes and reservoirs,”](#) which used standardized sampling across 38 freshwater lakes and reservoirs worldwide and identified Lake Tahoe as one of the three locations with the highest concentrations of plastic particles larger than 250 micrometers.

The scientific literature supports a distinction that is important in reporting this story: the presence of substantial plastic pollution in Lake Tahoe is established; deterioration of plastic materials into progressively smaller particles is well understood; but the quantitative contribution of monopine debris to Lake Tahoe’s total microplastic burden has not yet been established.

That unanswered question itself may warrant further research.

THE CENTRAL POLICY QUESTION

The Lake Tahoe experience raises a question relevant far beyond the Basin:

If cell tower infrastructure camouflage is intended to protect the environment, should regulators also require that the camouflage itself be environmentally durable?

TRPA has now answered that question by requiring greater scrutiny of plastic screening materials and encouraging alternatives where practicable.

MEDIA CONTACTS

Robert J. Berg, Esq.
Law Office of Robert J. Berg
robertbergesq@aol.com
914-522-9455

Julian Gresser, Esq.
Chairman Broadband International Legal Action Network (BBILAN)
juliangresser77@gmail.com
805-708-1864

Photographs, video, regulatory materials and litigation documents are available upon request.